

## TWO NEW WATER MITES SPECIES OF THE GENUS *SPERCHON* KRAMER, 1877 (ACARI, HYDRACHNIDIA, SPERCHONTIDAE)

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**Abstract** Two new species of the genus *Sperchon* Kramer, 1877, *Sperchon lanigerus* Guo et Jin, sp. nov. and *Sperchon perspicuus* Zhang et Jin, sp. nov. are described from China. All the type specimens are deposited in Institute of Entomology, Guizhou University, China (GUGC).

**Key words** Hydrachnidia, *Sperchon*, new species, China.

### 1 Introduction

*Sperchon* Kramer, 1877 is the largest genus in the family Sperchontidae Thor, 1900. It is widely distributed in Holarctic, Oriental and Ethiopian regions (Cook, 1974), and over 200 species were reported (Cook, 1974; Esen, Pesic and Erman, 2010; Kumar, Kumar and Pesic, 2007; Viets, 1987). Up to now, only 14 species were described from China (Jin, 1997; Jin et al., 2010; Zhang and Jin, 2010; Zhang et al., 2008; Zhang et al., 2010): *Sperchon beijingensis* Zhang & Jin, 2010; *Sperchon brevipalpis* Jin, 1997; *Sperchon curvipalpis* Zhang & Jin, 2010; *Sperchon fluviatilis* Uchida, 1934; *Sperchon garhwalensis* Kumar, Kumar & Pesic, 2007; *Sperchon gracilipalpis* Lundblad, 1941; *Sperchon heteropoda* Zhang & Jin, 2010; *Sperchon huangshanenses* Zhang & Jin, 2010; *Sperchon mirabilis* Lundblad, 1941; *Sperchon oligospinis* Jin, 1997; *Sperchon placoderma* Lundblad, 1967; *Sperchon plumifer* Thor, 1902; *Sperchon rostratus* Lundblad, 1968; *Sperchon turfanensis* Zhang & Jin, 2010.

During checking our collection of water mites from China, two new species were found, which are described herein.

### 2 Materials and Methods

Specimens were collected by JIN Dao-Chao and GUO Jian-Jun during 1997–1998 from China, and preserved in Koenike's solution and dissected as described elsewhere (e. g. Cook, 1974). Terms follow Jin (1997). The following abbreviations are used; A1, A2: antennal glandularia 1 and 2; ACG: anterior coxal group (Cx I + Cx II); Cx I–Cx IV: coxae I–IV; D1–D4: dorsoglandularia 1–4; E1–

E4: epimeroglandularia 1–4; L1–L4: lateroglandularia 1–4; O1, O2: ocularia 1 and 2; PCG: posterior coxal group (Cx III + Cx IV); P-I–P-V: palpal segments 1–5; V1–V4: venteroglandularia 1–4; I-L-1–I-L-6: the first leg segments 1–6; II-L-1–II-L-6: the second leg segments 1–6; III-L-1–III-L-6: the third leg segments 1–6; IV-L-1–IV-L-6: the fourth leg segments 1–6.

All the type specimens are deposited in Institute of Entomology, Guizhou University, China (GUGC). All measurements are given in  $\mu\text{m}$ .

### 3 Taxonomy

*Sperchon lanigerus* Guo et Jin, sp. nov. (Figs 1–10)

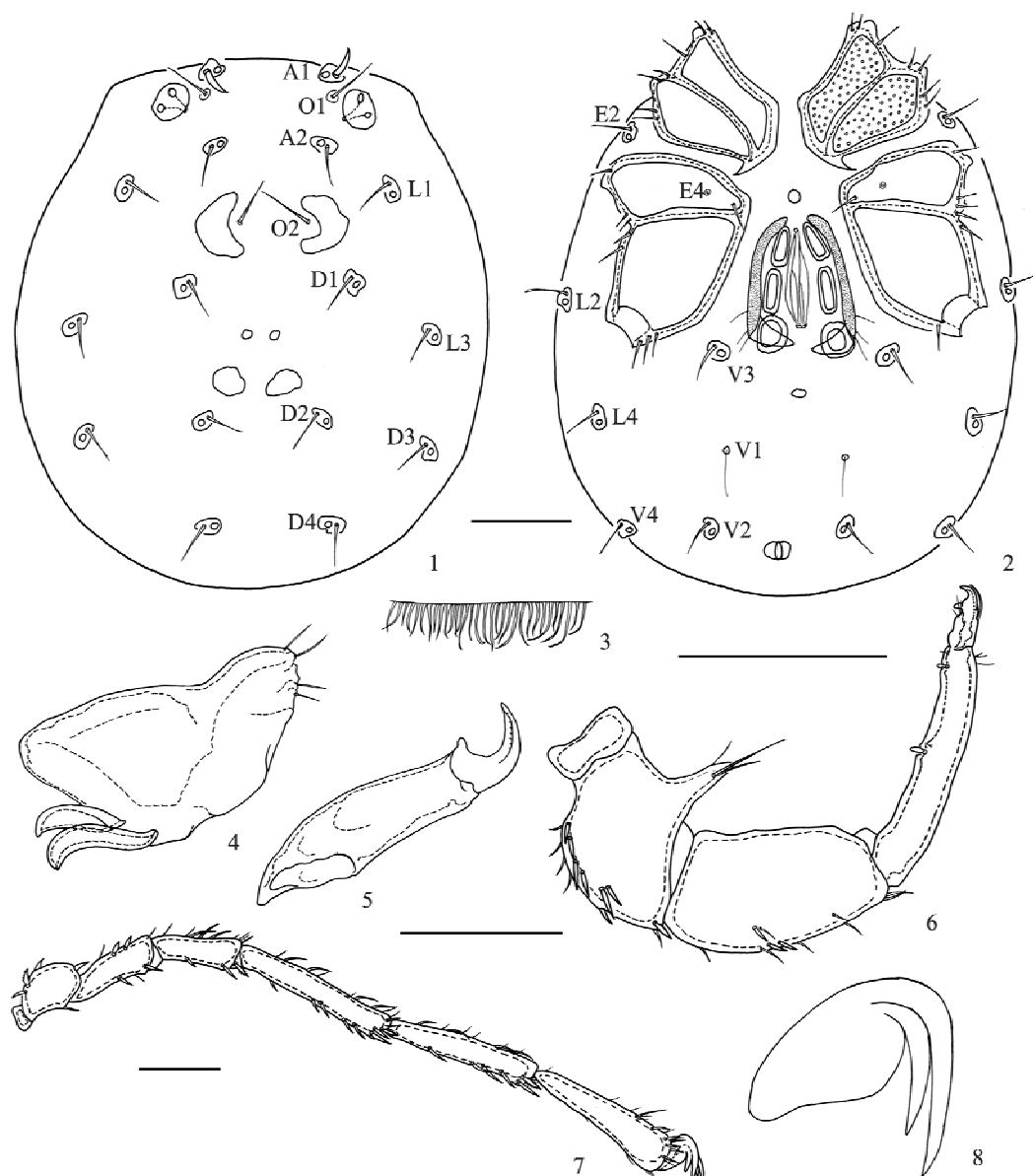
Diagnosis. Cuticle covered with fine threadlike decorations; A1 thick and short; P-II with a long ventro-distal projection bearing three setae; P-IV with two peg-like setae on the distal half of the venter, proximal one distal to middlength, distal one near terminal end; E4 on the Cx III; excretory pore smooth.

Male. Body flat and oval, 591 in length, 465 in width. Anterior margin of body in dorsal view somewhat concave. Color yellow-brown. Cuticle covered with fine threadlike decorations as shown in Fig. 3. A1 smooth and short, relatively thicker. Chitinous plates and glandular plates on both dorsum and venter shown in Fig. 1 and Fig. 2. ACG 150 in length, apodeme well developed. E2 on the lateral interval between ACG and PCG. PCG 195 in length. E4 almost on the middle 1/3 of Cx III. Distance between anterior end of Cx I and posterior end of Cx IV

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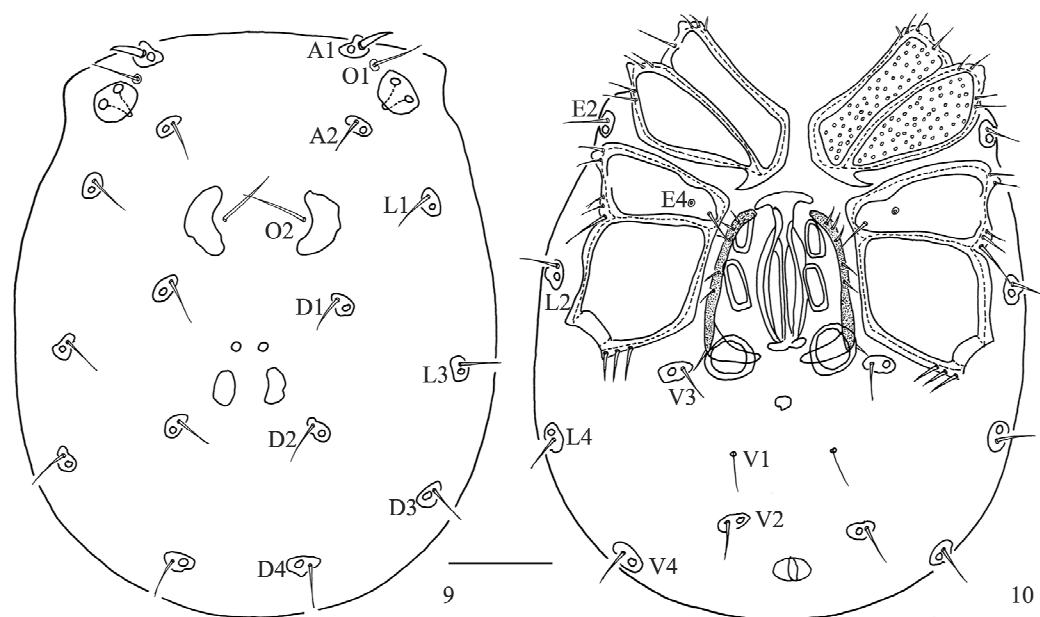
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Figs 1–8. *Sperchon lanigerus* Guo et Jin, sp. nov., male. 1. Idiosoma, dorsal view. 2. Idiosoma, ventral view. 3. Threadlike decorations of cuticle on caudal part of body. 4. Capitulum. 5. Chelicera. 6. Palp. 7. IV-L-1-6. 8. Claw. Scale bars: 1–2, 4–7 = 100  $\mu\text{m}$ , 3, 8 = 50  $\mu\text{m}$ .

340. Genital field between the last half of PCG, 156 in length and 116 in width. Genital valves not covering the genital acetabula; the first pair of genital acetabula more or less triangular, the second pair somewhat rectangular, the third pair almost rounded. A rounded platelet in front of genital field, and a relatively small rounded platelet behind the genital field. Pre- and postgenital sclerites not developed. V1 without accompanying glandularia, but with very small sclerites. Excretory pore smooth and posterior to the line at V2 level. Capitulum with a long rostrum, length 181. Chelicera total length 200, basal segment length 147, claw length 53, ratio of basal segment/claw length 2.8. Dorsal lengths of palpal segments: P-I, 24; P-II, 107; P-III, 138; P-IV, 155; P-V, 39. P-I short and without seta. P-II with long ventro-

distal projection bearing one long and two short setae almost same in length, and with about thirteen lateral and dorsal setae, none of them plumose. Venter of P-III empty, but the dorsal and lateral with eleven smooth setae. P-IV with two normal and two peg-like setae, proximal peg-like seta relatively larger approximately on the middle of the segment, distal peg-like setae small and near to terminal end of the segment. Dorsal lengths of the first leg: I-L-1, 48; I-L-2, 60; I-L-3, 70; I-L-4, 150; I-L-5, 135; I-L-6, 134. Dorsal lengths of the fourth leg: IV-L-1, 87; IV-L-2, 95; IV-L-3, 102; IV-L-4, 197; IV-L-5, 203; IV-L-6, 165. Fourth legs with a few short setae, none of them plumose (Fig. 7). Ambulacrum with two claws and each claw with well protruded claw blade bearing a long dorsal and a shorter ventral



Figs 9–10. *Sperchon lanigerus* Guo et Jin, sp. nov., female. 9. Idiosoma, dorsal view. 10. Idiosoma, ventral view. Scale bar = 100  $\mu$ m.

clawlet (Fig. 8).

Female. Cuticle with fine threadlike decorations as those of male. Anterior margin of body somewhat bulgy in dorsal view. Shapes of dorsalia, ventralia, coxae, and gnathosoma are very similar to those of the male. Morphological characteristics of genital field (Fig. 10) different from the male (Fig. 2). Body length 648, width 500. ACG 190 in length, PCG 210 in length. Distance between anterior end of Cx I and posterior end of Cx IV 360. Genital field 172 in length, 136 in width. Pre- and postgenital sclerites well developed. Gnathosoma length 211. Chelicera total length 229, basal segment length 171, claw length 57, ratio of basal segment/claw length 3.0. Dorsal lengths of palpal segments: P-I, 31; P-II, 131; P-III, 162; P-IV, 180; P-V, 42. Dorsal lengths of the first leg: I-L-1, 50; I-L-2, 70; I-L-3, 90; I-L-4, 145; I-L-5, 150; I-L-6, 157. Dorsal lengths of the fourth leg: IV-L-1, 66; IV-L-2, 95; IV-L-3, 113; IV-L-4, 216; IV-L-5, 205; IV-L-6, 199.

Holotype male, China, Guizhou Province, Libo Country, Banzhai Village, unnamed stream (25°13'N, 108°02'E), 23 Oct. 1998, coll. GUO Jian-Jun. Paratype one female, the same data as the holotype. The holotype and paratype were dissected and slide-mounted.

Etymology. The species is named after the fine threadlike decorations of the cuticle.

Remarks. The decorations of cuticle variable in the genus *Sperchon*, and it may be papillate, areolate, granular, lined or structureless, but the fine threadlike one has never been reported before this study. Thereby the new species could be separated from all known members of the genus by the unique fine

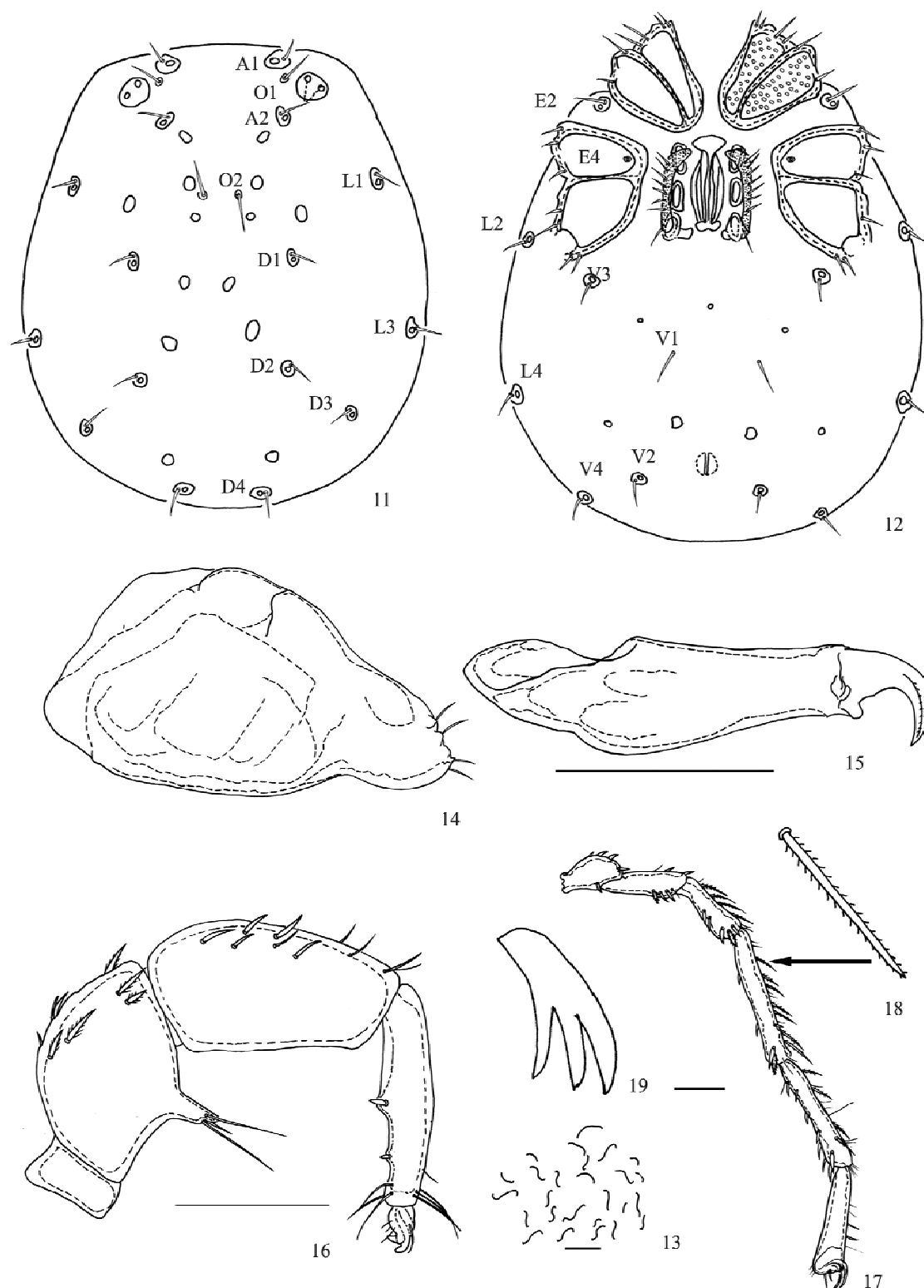
threadlike decorations of the cuticle.

The new species is similar to *Sperchon hispidus* Koenike, 1895 (Tuzovskij, 2010) from which it is easily distinguishable by the the form of A1 and the setae on third-fifth segments of leg I – IV. In *S. hispidus*, A1 and the setae on third-fifth segments of leg I – IV are all plumose, but smooth in the new species. A further difference is found in excretory pore, the excretory pore with a sclerotized ring in *S. hispidus*, whereas in the new species, without sclerotized ring in the new species.

***Sperchon perspicuus* Zhang et Jin, sp. nov.** (Figs 11–19)

Diagnosis. Cuticle soft, almost colorless and transparent, covered with irregular stripe; P-II with long ventro-distal projection bearing two equal long setae and one short seta; P-IV with two peg-like setae on ventral side, the proximal one larger than the distal one; six long and thin setae on the distal of P-IV; E4 on the Cx III; excretory pore smooth. Each claw with weakly protruded claw blade bearing three clawlets.

Female. Idiosoma oval, 905 in length, 790 in width. Cuticle soft, almost colorless and transparent, covered with irregular stripe (Fig. 13). Chitinous plates and glandular plates on both dorsum and venter relatively small (Fig. 11 and Fig. 12). A1 moderate in size, not plumose. Coxae in four group, surface of coxae reticulated. ACG close to each other, but not fused, 215 in length, apodeme indistinct. E2 on the lateral interval between ACG and PCG. PCG 260 in length, widely separated. E4 near to anteromedial margin of Cx III. Distance between anterior end of Cx I and posterior end of Cx IV 465. Genital field



Figs 11 – 19. *Sperchon perspicuus* Zhang et Jin, sp. nov., female. 11. Idiosoma, dorsal view. 12. Idiosoma, ventral view. 13. Decorations of cuticle. 14. Capitulum. 15. Chelicera. 16. Palp. 17. IV-L-1-6. 18. Dorsal seta of IV-L-4. 19. Claw. Scale bars; 11 – 12, 14 – 17 = 100  $\mu\text{m}$ , 13, 18 – 19 = 50  $\mu\text{m}$ .

between PCG, 210 in length, 166 in width, genital valves not covering the genital acetabula. Pre- and postgenital sclerites well developed. Three pairs of genital acetabula similar in size and shape. V1 without

accompanying glandularia and sclerotized base. Excretory pore smooth. Capitulum with a long rostrum, length 225. Chelicera total length 280, basal segment length 200, claw length 80, ratio of basal



segment/claw length 2.5. Dorsal lengths of palpal segments: P-I, 34; P-II, 125; P-III, 168; P-IV, 144; P-V, 29. P-I short and without seta. P-II with a long ventro-distal projection bearing two equal long setae and one short seta. Eight setae, five of them plumose, on the dorsal and lateral side of P-II. Venter of P-III smooth and without seta, while ten smooth setae on dorsal and lateral side of P-III. P-IV with two peg-like setae on ventral side, the proximal one is larger than the distal one. Six long and thin setae on the distal of P-IV. Dorsal lengths of the first leg: I-L-1, 60; I-L-2, 65; I-L-3, 90; I-L-4, 150; I-L-5, 155; I-L-6, 130. Dorsal lengths of the fourth leg: IV-L-1, 105; IV-L-2, 130; IV-L-3, 150; IV-L-4, 265; IV-L-5, 250; IV-L-6, 210. Third-fifth segments of leg I-IV with rather short plumose setae in longitudinal rows (Fig. 17 and Fig. 18). Ambulacrum with two claws and each claw with weakly protruded claw blade bearing three clawlets (Fig. 19).

Male. Unknown.

Holotype female, China, Xinjiang Uygur Autonomous Region, Altay City, Kanas Lake (48°48'N, 86°57'E), 14 Aug. 1997, coll. JIN Dao-Chao. Paratypes two females, the same data as the holotype. The holotype was dissected and slide-mounted.

**Etymology.** The species is named after the cuticle, "*perspicuus*" Latin word, meaning transparent.

**Remarks.** Due to the shape of palp, third-fifth segments of leg I-IV with plumose setae, claw with three clawlets and the presence of glandularia on Cx III, the new species is similar to *S. himalayus* Pesic & Smith, 2007 described from Bhutan (Pesic & Smith, 2007). However, the new species differs from *S. himalayus* in the patterning of cuticle and coxal surface. The cuticle striated in *S. himalayus*, but with irregular stripe in the new species; the coxal surface with cross-striped reticulation in *S. himalayus*, but with hole-like reticulation in the new species. Furthermore, the number of the chitinous plates on venter are also different; there are only four chitinous plates in *S. himalayus*, but seven ones in the new species (due to

the dorsum of *S. himalayus* was not illustrated and described in the original description, the comparison of the plates on the dorsum between the two species is not given here).

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## 刺触螨属二新种记述 (蜱螨亚纲, 水螨群, 刺触螨科)

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**摘 要** 记述了中国刺触螨属 2 新种: 被绒刺触螨 *Sperchon lanigerus* Guo et Jin, sp. nov. 和透明刺触螨 *Sperchon perspicuus* Zhang et Jin, sp. nov., 模式标本保存于贵州大学昆虫研究所。

**被绒刺触螨, 新种 *Sperchon lanigerus* Guo et Jin, sp. nov.**  
(图 1 ~ 10)

刺触螨属种类表皮饰性结构多样, 为乳突状、区划形、颗粒状、线纹状或光滑, 但至今为止还未见绒毛状的表皮突报道。新种的绒毛状表皮突结构明显区别于刺触螨属其它种类。如果不考虑此绒毛状表皮突结构, 新种和密刺触螨 *S. hispidus* 非常相似。但两者在 A1 和 I ~ IV 足的 3 ~ 5 节上的刚毛形状上不同, 密刺触螨 *S. hispidus* 的 A1 以及 I ~ IV 足的 3 ~ 5 节上的刚毛均为羽状, 新种的 A1 和 I ~ IV 足的 3 ~ 5 节上的刚毛为光滑状。另外, 两者在肛孔结构也不相同, 密刺触螨 *S. hispidus* 肛孔具骨化环, 新种的肛孔则不具有。

正模 ♂, 副模 1 ♀, 贵州省, 荔波县, 板寨村, 溪流 (25°13'N, 108°02'E), 1998-10-23, 郭建军采。

词源: 以表皮特征命名, “*lanigerus*”, 生茸毛的, 此种体

**关键词** 水螨群, 刺触螨属, 新种, 中国.

**中图分类号** Q959.226

表被覆茸毛状表皮突, 故名之。

**透明刺触螨, 新种 *Sperchon perspicuus* Zhang et Jin, sp. nov.** (图 11 ~ 19)

新种在须肢结构, I ~ IV 足的 3 ~ 5 节上具羽状刚毛, 爪具 3 个小爪以及 Cx III 上具腺孔等特征上与喜马拉雅刺触螨 *S. himalayus* 非常相似。但新种与喜马拉雅刺触螨在表皮结构和基节板上纹路不同。喜马拉雅刺触螨的表皮具线纹, 新种表皮具不规则条纹; 喜马拉雅刺触螨的基节板上具不规则的条纹, 新种基节板上具网状孔纹。此外, 此两种在腹面骨片数目上也不相同。喜马拉雅刺触螨腹面具 4 个骨片, 新种的腹面具 7 个骨片 (因喜马拉雅刺触螨的躯体背方在原文中没有描述, 所以无从比较此两种背方的骨片数目)。

正模 ♀, 副模 2 ♀ ♀, 新疆维吾尔自治区, 阿勒泰市, 喀纳斯湖 (48°48'N, 86°57'E), 1997-08-14, 金道超采。

词源: 以表皮特征命名, “*perspicuus*” 拉丁词, 意为透明的。

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